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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/820,963	03/30/2001	Alexander Flaig	EVOY001/00US	3906
23494	7590	12/12/2006	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED			TSE, YOUNG TOI	
P O BOX 655474, M/S 3999			ART UNIT	
DALLAS, TX 75265			PAPER NUMBER	
			2611	

DATE MAILED: 12/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/820,963

Applicant(s)

FLAIG ET AL.

Examiner

YOUNG T. TSE

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-54 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-6, 8-18, 20-24, 26-31, 35-44 and 50-54 is/are allowed.
- 6) ☒ Claim(s) 7, 19, 25, 34 and 45 is/are rejected.
- 7) ☒ Claim(s) 32-33 and 46-49 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 December 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to because the arrow flow between the block elements 8 and 31 should be flowed in the opposite direction (see paragraph [0049] of the specification and Fig. 3). In Fig. 7, the line connection between the block elements 32 and 328 is not completely connected with each other. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: the reference sign "200" mentioned in line 1 of paragraph [0033] is not shown in Fig. 2. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

3. The disclosure is objected to because of the following informalities:

In paragraph [0027], line 3 (both occurrences) and line 5, "122A" should be "122 1".

In paragraph [0029], line 8, the term "its associated user based the receiver" is not understood.

In paragraph [0034], line 3, "Msps" appears to read "Mbps".

In paragraph [0035], line 2, "220 1 through j" should be "220 A through K".

In paragraph [0044], lines 11-12 and paragraph [0046], line 3, the terms “the communication system 100” and “the receiver system 100” are not understood since the discussion of paragraphs [0044] and [0046] is related to Fig. 2, which does not include the reference sign 100.

In paragraph [0051], lines 8-9, the term “[T]his estimate is then sent to regeneration-signal generator 226” is not understood since the estimated signal is not sent to regeneration-signal generator 226 as shown in Fig. 5.

In paragraph [0057], line 3, “Msps” appears to read “Mbps”.

In paragraph [0060], lines 1 and 3, “114” and “processor 320” should be “414” and “receiver 320”, respectively.

In paragraph [0064], line 2, “16” should be “15”.

In paragraph [0068], line 10, “114” should be “414”.

In paragraph [0076], line 10 of the amendment filed on December 27, 2005, “46” should be “462”.

Appropriate correction is required.

### ***Claim Objections***

4. Claims 32-34 and 46-49 are objected to because of the following informalities:

In lines 2 and 4 of claims 32-34, “a first user” and “a second user” should “the first user” and “the second user”, respectively, for clarity (also see page 3, lines 1-3 of the previous Office Action).

In line 3 of claims 46-49, “calculate” should be “calculates”.

In claim 46, line 4, "signal" should be "signal." (also see page 3, line 5 of the previous Office Action). In the remarks/argument, the Applicants argued that no change is needed from "signal" to "signal". However, a period "." is required after the word "signal" ends.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 7, 19, 34 and 45 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The specification lacks support and the disclosure of the drawings fails to show that the regeneration factor associated with the first user and the regeneration factor associated with the second user are performed in series, as recited in claims 7, 19, 24 and 45.

***Allowable Subject Matter***

7. The indicated allowability of claim 25 is withdrawn in view of the newly discovered reference(s) to Huang et al.. Rejections based on the newly cited reference(s) follow.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

9. Claim 25 is rejected under 35 U.S.C. 102(a) as being anticipated by Huang et al. U.S. Patent No. 6,154,443 (hereinafter "Huang").

Huang discloses an uplink Rake receiver in Fig. 1B comprising a plurality of CDMA Rake receivers 50 from a plurality of users 1-L through an RF front-end 44, an A/D converter 46 and an FFT transform unit 48.

Fig. 3A shows the detail embodiment of each of the CDMA Rake receivers 50 of Fig. 1B. In Fig. 3A, each CDMA Rake receiver 50 comprises a multi-user interference cancellation unit 110, a data signal spreading code matched filter 112, a channel matched filter 114, a decision unit 116, an interference signal estimation unit 118, and a pilot signal spreading code matched filter 120.

With respect to claim 25, the decision circuits 116 of the CDMA Rake receivers 50 for determining a plurality of soft-decision regeneration factors associated with a

plurality of users, each soft-decision regeneration factor from the plurality of soft-decision regenerator factors being uniquely associated with each user from the plurality of users; and canceling interference by the multi-user interference cancellation unit 110, for a first user from the plurality of users, from a received signal  $R[k]$  based on the plurality of soft-decision regeneration factors excluding the soft-decision regeneration factor associated with the first user.

### ***Allowable Subject Matter***

10. Claims 1-6, 8-18, 20-24, 26-31, 35-44 and 50-54 are allowed.
11. Claims 32-33 and 46-49 would be allowable if rewritten or amended to overcome the objection(s) set forth in this Office action.

### ***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Van Heeswyk et al. relates to systems and methods for canceling interference and canceling the extra interference created during position location in a CDMA cellular system.

Elgamal et al. relates to a method of symbol transmission employing space-time codes in a multiple antenna wireless communication system and a method and apparatus for space-time signal processing and multi-user detection and decoding in a multiple antenna wireless communication system.

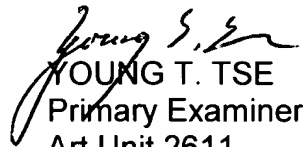


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to YOUNG T. TSE whose telephone number is (571) 272-3051. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
YOUNG T. TSE  
Primary Examiner  
Art Unit 2611